DLOC Precursor IC 5.3: Practice Exercise #2

Directions: Choose the lettered answer that best completes the question. There is only one correct answer for each question unless indicated otherwise.

1. Two sample volumes are located at 50 nm and 70 nm from a radar. They contain the same number and size particles. The power returned from 70 nm will be _____ from 50 nm. The reflectivity from 50 nm will be _____ from 70 nm.

a. greater than, less than
b. less than, greater than
c. greater than, the same as
d. less than, the same as

2. The amount of power returned to a WSR-88D radar is _____ related to the power transmitted and _____ related to the target range.

a. directly, directly
b. directly, inversely
c. inversely, directly
d. inversely, inversely

3. The beamwidth for WSR-88D radars varies between 0.87° and 0.96° and is a function of the transmission wavelength and antenna diameter. If a radar has an antenna dish diameter of 28 ft and transmits at a frequency of 2800 MHz, the beam width is approximately _____.

$$\theta \approx \frac{73^{\circ}\lambda}{d}$$

a. 0.88°
b. 0.90°
c. 0.92°
d. 0.96°

4. Incomplete beam filling will result in the WSR-88D displaying reflectivity values _____ what the actual drop-size distribution would produce.

a. higher than
b. lower than
c. identical to
d. comparable to